

CONCEPT OF SUSTAINABILITY AND EMERGENCE OF GREEN MUSEUMS: AN OVERVIEW

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Abstract

Today, a good number of museums of the developed countries are responding to the environmental crisis in a more positive way, by incorporating sustainability into their operations and programming. In the museum field, such institutions are known as “green museums”.

Green museums are a recent trend in museum management and are earning great interest among the professional community and literature about museum sustainability flourishing. Within two years, green museums were twice the cover story for the professional publication of the American Association of Museums (AAM).

In India, this concept is yet to take a mind space in to museum professionals. Though, some natural history museums of India like Regional Museums of Natural History under the control of National Museum of Natural History (NMNH), New Delhi, have started incorporating the green practices in to its functioning to support the concept of sustainability. But, other museums and cultural institutions have to go long.

Present paper is based on certain observations of eminent scholars, recommendations of the conferences and professional associations on the significance of green museums and the concept of sustainability. It would be a window for the Indian museum professionals to understand, adopt and execute the green practices and sustainability in to their museums.

Keywords: *Green Museum, Sustainability, Climate Change, Environmental Crisis, Ecosystem.*

1 Introduction

According to the International Council of Museums (ICOM) Statutes, adopted by the 26th General Conference at Prague, on 24 August 2022, the current definition of the museum is as follows:

“A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and

with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing.”

This latest definition of ICOM clearly indicates that museums are in the service of society and its development. All museums are primarily service oriented and meant to educate the masses through its three dimensional objects, its educational activities, outreach programmes and community based programmes. The issues may be cultural, social or environmental.

The definition also states that the museums have to play an important role in education,

particularly non-formal education to their visitor's, whether these are children or adults. Natural History Museums in particular have much more potential for a more effective and potent role in contributing to the objective of non-formal environmental education. As per latest definition, the museums foster diversity and sustainability.

"Museums and the Environment" a hand book for Education, A publication of the American Association of Museums (AAM) was perhaps the first detailed document to look into the museum's role in creating environmental awareness. In the book it is ensured that, 'the museums are admirably equipped, through their diverse collections, their expertise in display, their long experience in conservation and vast clientele to play an important role in making public aware of environmental problems as well as of the means for their solution'. The book also reviews the historic involvement of United State's museums in presenting various aspects of man and his environment through its exhibits and educational programmes to their visitors.

The modern natural history museum with its dinosaurs, live insects and breathtaking displays of gems and minerals is a wonderfully accessible place for popular science education. The subject matter of natural history collection or museum may range from zoology, botany, paleontology, and mineralogy to zoology and anthropology. These collections are the foundation for research on some of the fundamental phenomena of biological science: evolution, ecology, climate change, biogeography, behavior, agriculture and, if they include the human sciences, culture. But they face a changing and uncertain future.

Today, the world is facing an environmental crisis that affects all regions of the world and all levels of society. Greenhouse gas emissions are leading to a potentially catastrophic rise in global climate temperatures [1]. Plants, animals, and ecosystems are rapidly nearing extinction

[2], while natural disasters such as hurricanes, floods, and wildfires, are increasing in frequency and severity [3]. Many problems are associated with human actions of a consumption- based culture. Humans harm the environment through the process and the effects from the extraction of natural resources and the manufacture of products from those resources. However, the current rate at which humans consume and pollute cannot be maintained indefinitely. Scholars believe that consequences of these actions may lead to Earth's inability to support life. In order to prevent this crisis, human actions need to change [4].

People act on the natural environment based on beliefs and values held within cultural and societal norms. Education and personal experiences also inform a person's understanding of nature.

The politically charged issue of climate change has found its way into museums. During the spring of 2007, the Smithsonian National Museum of Natural History was accused of watering down *A Friend Acting Strangely*, an exhibition that illustrated the effects of climate change on the Arctic. For fear of losing funding from Congress, the Smithsonian eliminated display elements that described the severity of climate change.

Other museums are responding to the environmental crisis in a more positive way, by incorporating sustainability into their operations and programming. In the museum field, such institutions are known as "green museums" [3].

2 Concept of Sustainability in Museums

Sustainability is, at its most basic, concerned with the needs of the future. The generally accepted definition says that sustainability means 'meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Museums similarly consider the future as well as the present. Museums ‘enhance the quality of life of everyone, both today and in the future’. They balance the interests of different generations: As well as a responsibility to provide access to current and future generations, there is a duty to respect the contributions of past generations, particularly benefactors, communities of origin and creators of the objects which museums now safeguard. Museums devote considerable resources to honoring the legacy of collections, information and knowledge contributed by people in the past and passing it on to future generations. Considering the significance of sustainability, it was included in the latest definition of museum approved in the general conference of ICOM at Prague on 24th August 2022.

Sustainability is usually considered under three headings. The most familiar of these is environmental sustainability (Figure1). But it is

about much more than meeting the challenges of climate change; there is also economic sustainability and social sustainability.

Sustainability is connected to education, the economy, business, travel, leisure and our communities. Getting the balance right is vital to secure a stable future. A massive cultural shift is required in every community, in every school, every workplace and every home.

Surprisingly, few museums are yet thinking explicitly about sustainability. Over four years ago Museums Journal observed: ‘Everyone is talking about sustainability, Except museums.’ [5]. In 2006 Museum Practice concluded that relatively few museums in the UK can claim to be taking environmental sustainability seriously [6]. Internationally, ‘most conventional museums are not engaged in sustainable development work... despite potential benefits that might flow to their institutions and local communities.’ [7]

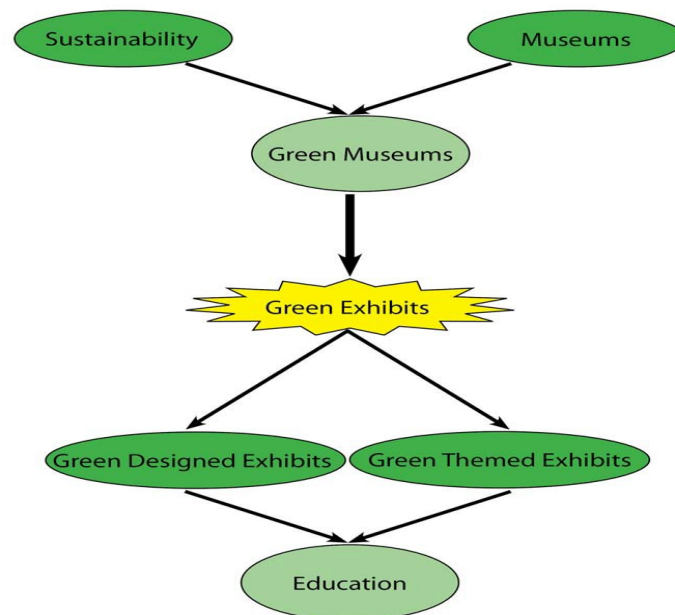


Figure 1: Museums and Sustainability

3 To flourish sustainably

Value and protect natural and cultural environments are sensitive to the impact of the museum and its visitors on them. In order to flourish sustainability the following points are to be maintained:

- a) Strive for excellence, building deep long-term relationships with a range of audiences.
- b) Acknowledge the legacy contributed by previous generations and pass on a better legacy of collections, information and knowledge to the next generation.
- c) Manage collections well, so that they will be a valued asset for future generations, not a burden.
- d) Make the best use of energy and other natural resources and minimize waste, setting targets and monitoring progress towards them.
- e) Consider the potential for demonstrating and encouraging sustainable development.
- f) Contribute responsibly to the social, cultural and economic vitality of the local area and wider world.
- g) Develop staff, offer satisfying and rewarding employment and learn from their experience and that of others.
- h) Respond to changing political, social, environmental and economic contexts and have a clear long-term purpose that reflects society's expectations of museums.
- i) Plan long-term, take full account of sustainable development in all their activities and policies and work within available resources.
- j) Join with other museums, and other organizations, in partnerships and mergers, where it is the best way of meeting their purpose in the long term.

4 Environmental Sustainability: going green

'Caring about the environment is a natural extension of museums' primary role of stewardship of their collections' [6]. It would be perverse to preserve evidence of the natural world and human society without regard to the protection of the wider environment. Museums cannot claim to be serving the best interests of future generations if they have negative impacts on the environment that will make it harder for our descendants to live securely on the planet, let alone to enjoy museum collections. Thankfully, sustainability needn't require museums to undertake total renovations or dramatic overhauls of their premises or practices. Simple steps can be a good starting point for institutions looking to do their bit for environmentalism.

5 To fight climate change and to be more sustainable

While by no means a total resolution to the issue of sustainability in museums, making small changes is a great starting point for establishments, especially those who are small or medium sized and community led. Here are 10 simple yet effective ways to lower emissions, reduce waste and turn museums into altogether greener entities:

- a) **Switch to LED lighting solutions:** it's no secret that electric lighting can take up a significant wedge of your carbon footprint, but making the switch to LED lighting is a seamless exercise that can make a significant difference. However obvious this recommendation may seem the truth is that all too many museums are still reliant on lighting installed decades ago.
- b) **Recycle and compost your waste:** responsible waste disposal is one of the cornerstones of effective sustainability,

and recycling and composting your waste appropriately should be considered a minimum requirement for museums.

- c) ***Remove plastic bags from the gift shop:*** many institutions now charge for the use of plastic carrier bags, but removing unnecessary plastic from your museum can act as a good ground rule for practicing sustainability.
- d) ***Find your energy drainers:*** doing an inventory of your establishment's main energy users can give you a clearer idea of how best to reduce your usage. Is there a particular space or piece of equipment that's draining your resources? Think heating systems, air conditioning units and audio-visual equipment left on 24/7. Lighting left on overnight is another key issue in many museums – a problem that can be easily resolved through the installation of motion sensors.
- e) ***Go paperless, or switch to recycled paper:*** with society as a whole going increasingly digital, the need for hard copies is reducing all the time. Where they are necessary, try and opt for recycled paper.
- f) ***Seek out and plug up leaks and draughts:*** it sounds mundane, but draught sources can significantly increase energy usage within museums, especially during colder months.
- g) ***Go for green cleaning products:*** changing the way you think about restocking your museum supplies is key to continued sustainability. When it comes to the likes of cleaning products, consider investing in greener alternatives.

h) ***Create a zero-waste event:*** many museums host several annual events a year. By making just one of these events zero-waste, it can act as a significant step forward in terms of both action and awareness.

i) ***Remind staff about the importance of sustainability:*** a team effort is far more effective than an individual one when it comes to sustainability. If everyone within the museum team is aware of the efforts they should be making, the reward will be far greater. There's plenty of research now showing that changing behaviors is as powerful a tool as any technological improvement.

j) ***Spread the word:*** eco-inspired programs, exhibitions and lectures can help your museum become more actively involved in the fight against climate change.

6 The rise of Green Museums

In recent years, the concept of the “green museum” has gained momentum. Although there are no hard and fast rules to this label, the term typically refers to a museum that factors concepts of sustainability into its programming and operations. Many of these establishments use their collections to produce events, exhibitions and other programming with the intent to educate visitors about the environment. They strive to help people become more conscious of the world around them.

The green museum movement actually began primarily in children's museums, with The Children's Discovery Museum in Illinois becoming the first Leadership in Energy and Environmental Design (LEED) certified children's museum in 2005. Since then, many museums have followed suit, including The Brooklyn Children's Museum, the Boston Children's Museum, the Grand Rapids Art

Museum and many more. The following are some examples of significant museums of the world where the green practices have started in to their functions.

6.1 Jeongok Prehistory Museum

Some of the most successful and innovative museums from around the world are also the most sustainable. This is certainly the case when it comes to the Jeongok Prehistory Museum in South Korea (Figure 2).

Built on a site of archaeological significance, the museum is dedicated to educating and immersing visitors in the prehistoric past. The structure itself is built between two elevated points, making it feel at one with the natural surroundings. But not only is the building beautiful, it also regulates internal temperature in order to keep energy usage to an absolute minimum.

6.2 Cité de l'Océan et du Surf

Another example of sustainability within the museum space comes from the Basque coast in France. With a specific ecological focus at its

heart, the Cité de l'Océan et du Surf (Fig-3) features exhibitions about the importance of the environment and our oceans. Its striking design is both beautiful and highly sustainable.

6.3 Natural History Museum of Utah

The NHMU is dedicated to exploring the relationship between humans and the natural world, so it's no surprise that it remains one of the most sustainable institutions of its kind. In fact, the establishment was fully renovated in 2011 to meet new green building standards, and the museum works continually to minimize its environmental impact (Figure 4).

One-look at the museum reflects this. The green roof and extensive solar array work to manage water waste and use solar energy for heating and cooling the building. What's more, many of the building materials are locally sourced.



Figure 2 Jeongok Prehistory Museum, South Korea (Picture Courtesy: inhabitat.com)



Figure 3 Cité de l'Océan et du Surf (Picture Courtesy: theplan.it)



Figure 4 Natural History Museum of Utah (Picture Courtesy: nhmu.utah.edu)

6.4 Regional Museum of Natural History, Bhubaneswar (Odisha)

Regional Museum of Natural History (RMNH), Bhubaneswar a regional museum under control of NMNH, New Delhi (a subordinate office of the MOEF& CC) had taken a lead in doing some green practices for sustainability in its museum by installing functional “Roof Top” solar power plant (Fig-5), rain water harvesting system, replacement of conventional lights with LED lighting, use of bio-decomposers for green waste and leaving 40% of total land area for better absorption of rain water to re-charge ground water level. Since June 2018, the RMNH,

Bhubaneswar has innovated completely distinct technique of making 100% biodegradable exhibits and models and has avoided approximately 800-900 Kg use of plastic till August 27, 2019. Based on this technique, some models are still under preparation.

The NMNH and other regional museums also organized various awareness programmes related to environmental protection like, Harit Deewali Campaign, Go Green Deeds, No to Plastic and Conservation of Natural Resources etc (Fig-6)., but they have to plan some more green practices for sustainability.



Figure-5 Roof Top Solar Power Plant, RMNH Bhubaneswar

7 Conclusions

Sustainability does not have to mean a total overhaul for museums. It can mean taking small but significant steps towards being more environmentally conscious in both daily practices and through exhibitions and events. However, the issue of environmentalism does provide an opportunity for museums to embrace the current fight against climate change with open arms. People around the world are looking for more information and more chances to be active, and museums should be well placed to provide this.

Museums should take advantage of the unique position they occupy between the academic world and the general public to help move humanity onto a sustainable path [8]. Above all, we must strive to bring together the skills and knowledge of scholars in the human and natural sciences with the talents of museum interpreters, designers and crafts people. The challenge is to direct people's thoughts toward a consideration of our unsustainable ways of life and an exploration of the options [9].



Figure-6 Clean Environment Campaign RMNH, Bhubaneswar

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